

DRY MATTER INTAKE OF THE FIRST-PARITY COWS, BRED IN ESTONIA, AT THE BEGINNING OF LACTATION

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Abstract. Precise estimation of dry matter intake (DMI) is a prerequisite for accurate balancing of dairy ration. It is crucially important to estimate DMI as precisely as possible in the first part of lactation, when cows use intensively body reserves, and the increased incidences of metabolic diseases may raise problems in fertility. In the present investigation the DMI of first-parity cows bred in Estonia was estimated at the beginning of lactation. Four groups were formed from pregnant heifers: two from Estonian Holstein breed a) high genetic merit (EHF₁) – 20 cows, b) medium genetic merit (EHF) – 20 cows; one group from Red-and-White Holstein breed (RHF) – 20 cows; and one from Estonian Red breed (EPK) – 20 cows. Two different totally mixed rations (TMR) were fed twice a day – the first ration (contained 12.0 MJ/kg of ME, >100 g/kg of MP, >12 % CF in DM) from calving to 150 days of lactation, and the second ration (contained 11.0 MJ/kg of ME, >95 g/kg of MP, >15 % CF in DM) from calving to the end of lactation. Milk production and DMI were determined twice a month, body weight – once a month. Data from 638 measurements were statistically processed and DMI prediction models for different groups were calculated. The DMI ranged from 5.2 to 31.7 kg/d; days in milk (DIM) – from 1.0 to 232.0, and milk yield from 8.4 to 49.7 kg/d. Within the group DMI correlated positively ($P < 0.0001$) with DIM, body weight (BW), milk yield, DM content in TMR, ME content in TMR and negatively with crude fibre, acid detergent fibre (ADF) and neutral detergent fibre (NDF) content in TMR. All calculated models were statistically significant ($P < 0.0001$), but R^2 was relatively low in all models (0.2070 to 0.4413).

Keywords: dry matter intake, intake prediction.